

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1) : 0

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FILE COVERS 1907 - 12 Dec 2002 VOL 137 ISS 24  
FILE LAST UPDATED: 11 Dec 2002 (20021211/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> S 13  
L4 9 L3

=> d bib abs hitstr 1-9

L4 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2002 ACS  
 AN 2002:575064 CAPLUS  
 DN 137:125091  
 TI Preparation of 2-(2,6-dioxo-3-piperidyl)isoindoline-1,3-diones, related compounds, and compositions thereof as TNF-.alpha. inhibitors for treatment of cancer, inflammatory disorders, heart disease, and related disorders  
 IN Robarge, Michael J.; Chen, Roger Shen-Chu; Muller, George W.; Man, Hon-Wah  
 PA Celgene Corporation, USA  
 SO PCT Int. Appl., 224 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN:CNT 1

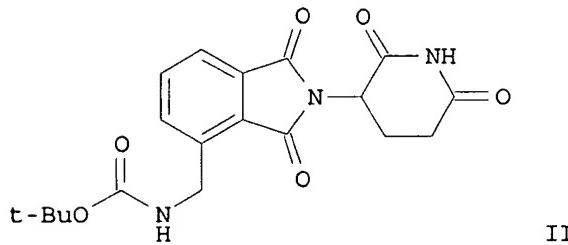
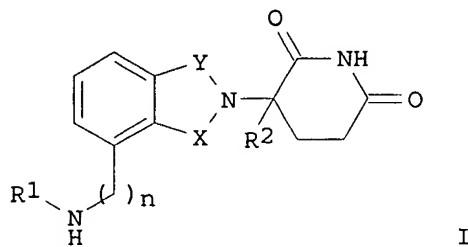
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002059106	A1	20020801	WO 2001-US50401	20011221
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,			

LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,  
 PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA,  
 UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,  
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2000-258372P P 20001227  
 US 2001-972487 A 20011005

OS MARPAT 137:125091

GI



**AB** Title isoindole-imides I [wherein one of X and Y is CO and the other is CH<sub>2</sub> or CO; R<sub>1</sub> = H, (cyclo)alkyl, alkenyl, alkynyl, benzyl, aryl, alkylheterocycloalkyl, alkylheteroaryl, COR<sub>3</sub>, CSR<sub>3</sub>, CO<sub>2</sub>R<sub>4</sub>, alkyl-(NR<sub>6</sub>)<sub>2</sub>, alkyl-OR<sub>5</sub>, alkyl-CO<sub>2</sub>R<sub>5</sub>, CONHR<sub>3</sub>, CSNHR<sub>3</sub>, CON(R<sub>3</sub>)<sub>2</sub>, CSN(R<sub>3</sub>)<sub>2</sub>, or alkyl-OCOR<sub>5</sub>; R<sub>2</sub> = H, benzyl, alkyl, alkenyl, or alkynyl; R<sub>3</sub> = independently (cyclo)alkyl, alkenyl, alkynyl, benzyl, aryl, alkylheterocycloalkyl, alkylheteroaryl, alkyl-N(R<sub>6</sub>)<sub>2</sub>, alkyl-OR<sub>5</sub>, alkyl-CO<sub>2</sub>R<sub>5</sub>, alkyl-OCOR<sub>5</sub>, or CO<sub>2</sub>R<sub>5</sub>; R<sub>4</sub> = alkyl, alkenyl, alkynyl, alkyl-OR<sub>5</sub>, benzyl, aryl, alkylheterocycloalkyl, or alkylheteroaryl; R<sub>5</sub> = alkyl, alkenyl, alkynyl, benzyl, aryl, or heteroaryl; R<sub>6</sub> = independently H, alkyl, alkenyl, alkynyl, benzyl, (hetero)aryl, or alkyl-CO<sub>2</sub>R<sub>5</sub>; or R<sub>6</sub> groups may join to form a heterocycloalkyl group; n = 0-1; with the proviso that when n = 0, R<sub>1</sub> .noteq. H; or pharmaceutically acceptable salts, hydrates, solvates, clathrates, enantiomers, diastereomers, racemates, or mixts. of stereoisomers thereof] were prep'd. for reducing the level of cytokines and their precursors in mammals. In particular, the invention pertains to isoindole-imide compds. that are potent inhibitors of the prodn. of TNF-.alpha. (no data). For example, Me 2-(methoxycarbonyl)-3-nitrobenzoate was hydrogenated with 10% Pd/C (87%). The amine was converted to the nitrile by diazonium salt formation effected by treatment with NaNO<sub>3</sub> followed by cyanide formation using classic Sandmeyer procedure (65%). The nitrile was reduced with 10% Pd/C in MeOH and aq. HCl under hydrogen to afford Me 3-aminomethyl-2-(methoxycarbonyl)benzoate.bul.HCl (90%), which was treated with TEA and then reacted with di-t-Bu dicarbonate to give the carbamate (93%). Cyclization with 3-aminoglutarimide.bul.HCl using diisopropylethylamine in DMF produced II (82%). The 2-(2,6-dioxo-3-piperidyl)isoindoline-1,3-diones and pharmaceutical compns. comprising them are useful for treating or preventing diseases or disorders in mammals, e.g. cancers, such as

solid tumors and blood-born tumors; heart disease, such as congestive heart failure; osteoporosis; and genetic, inflammatory, allergic, and autoimmune diseases (no data).

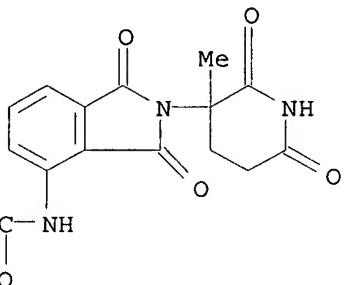
IT 444288-45-3P, 2-Methoxy-N-[2-(3-methyl-2,6-dioxopiperidin-3-yl)-1,3-dioxo-2,3-dihydro-1H-isoindol-4-yl]acetamide 444288-47-5P,  
Pentanoic acid [2-(3-methyl-2,6-dioxopiperidin-3-yl)-1,3-dioxo-2,3-dihydro-1H-isoindol-4-yl]amide 444288-49-7P, Heptanoic acid  
[2-(3-methyl-2,6-dioxopiperidin-3-yl)-1,3-dioxo-2,3-dihydro-1H-isoindol-4-yl]amide 444288-51-1P, 3-Chloro-N-[2-(3-methyl-2,6-  
dioxopiperidin-3-yl)-1,3-dioxo-2,3-dihydro-1H-isoindol-4-yl]benzamide  
444288-53-3P, N-[2-(3-Methyl-2,6-dioxopiperidin-3-yl)-1,3-dioxo-  
2,3-dihydro-1H-isoindol-4-yl]propionamide 444288-55-5P,  
Thiophene-2-carboxylic acid [2-(3-methyl-2,6-dioxopiperidin-3-yl)-1,3-  
dioxo-2,3-dihydro-1H-isoindol-4-yl]amide 444288-88-4P  
**444288-99-7P**

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(TNF-.alpha. inhibitor; prepn. of (oxopiperidyl)isoindolinone  
TNF-.alpha. inhibitors by cycloaddn. of aminoglutarimides to  
carboxybenzoates)

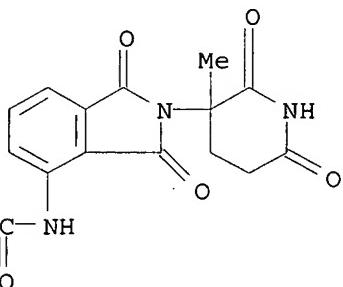
RN 444288-45-3 CAPLUS

CN Acetamide, N-[2,3-dihydro-2-(3-methyl-2,6-dioxo-3-piperidinyl)-1,3-dioxo-1H-isoindol-4-yl]-2-methoxy- (9CI) (CA INDEX NAME)



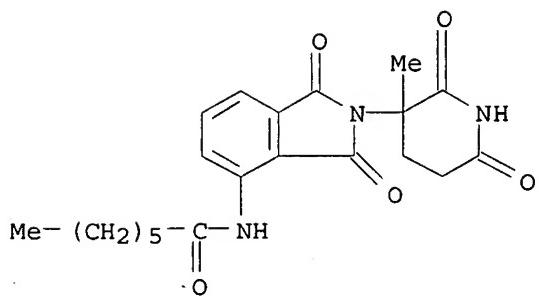
RN 444288-47-5 CAPLUS

CN Pentanamide, N-[2,3-dihydro-2-(3-methyl-2,6-dioxo-3-piperidinyl)-1,3-dioxo-1H-isoindol-4-yl]- (9CI) (CA INDEX NAME)



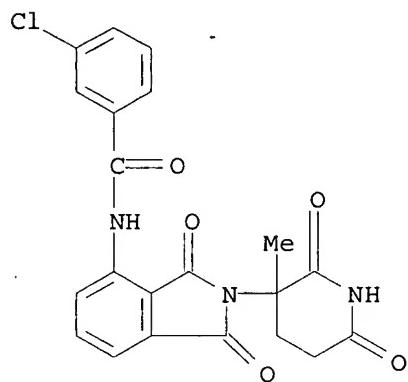
RN 444288-49-7 CAPLUS

CN Heptanamide, N-[2,3-dihydro-2-(3-methyl-2,6-dioxo-3-piperidinyl)-1,3-dioxo-1H-isoindol-4-yl]- (9CI) (CA INDEX NAME)



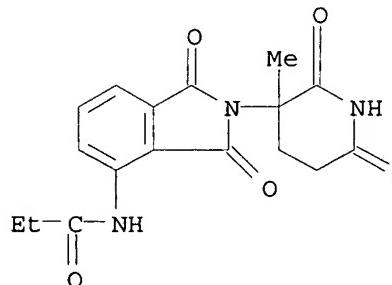
RN 444288-51-1 CAPLUS

CN Benzamide, 3-chloro-N-[2,3-dihydro-2-(3-methyl-2,6-dioxo-3-piperidinyl)-1,3-dioxo-1H-isoindol-4-yl]- (9CI) (CA INDEX NAME)



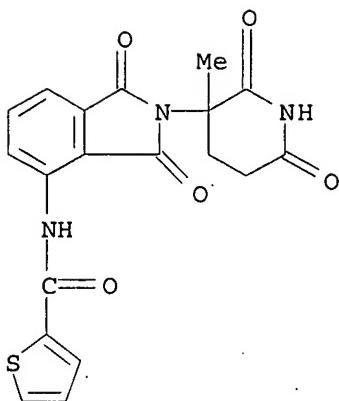
RN 444288-53-3 CAPLUS

CN Propanamide, N-[2,3-dihydro-2-(3-methyl-2,6-dioxo-3-piperidinyl)-1,3-dioxo-1H-isoindol-4-yl]- (9CI) (CA INDEX NAME)



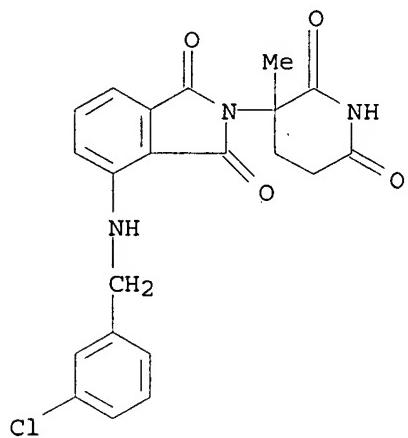
RN 444288-55-5 CAPLUS

CN 2-Thiophenecarboxamide, N-[2,3-dihydro-2-(3-methyl-2,6-dioxo-3-piperidinyl)-1,3-dioxo-1H-isoindol-4-yl]- (9CI) (CA INDEX NAME)



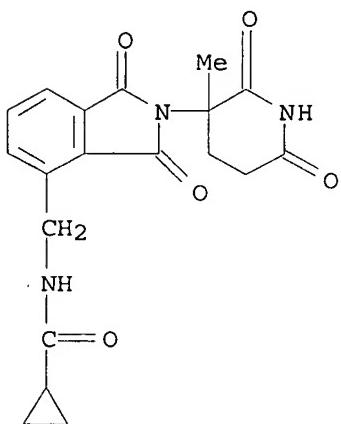
RN 444288-88-4 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4-[[[3-chlorophenyl]methyl]amino]-2-(3-methyl-2,6-dioxo-3-piperidinyl)- (9CI) (CA INDEX NAME)



RN 444288-99-7 CAPLUS

CN Cyclopropanecarboxamide, N-[[2,3-dihydro-2-(3-methyl-2,6-dioxo-3-piperidinyl)-1,3-dioxo-1H-isoindol-4-yl]methyl]- (9CI) (CA INDEX NAME)

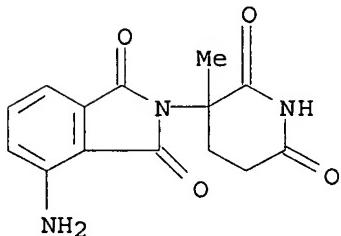


IT 202271-87-2, 4-Amino-2-(3-methyl-2,6-dioxopiperidin-3-yl)isoindole-1,3-dione 444289-00-3, 4-(Aminomethyl)-2-(3-methyl-2,6-dioxo-3-piperidinyl)isoindoline-1,3-dione monohydrochloride

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reactant; prepn. of (oxopiperidyl)isoindolinone TNF-.alpha. inhibitors  
by cycloaddn. of aminoglutaramides to carboxybenzoates)

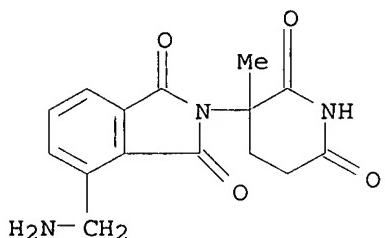
RN 202271-87-2 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4-amino-2-(3-methyl-2,6-dioxo-3-piperidinyl)-  
(9CI) (CA INDEX NAME)



RN 444289-00-3 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4-(aminomethyl)-2-(3-methyl-2,6-dioxo-3-piperidinyl)-, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2002 ACS

AN 2002:211227 CAPLUS

DN 137:241664

TI Thalidomide and its analogues as cyclooxygenase inhibitors

AU Noguchi, Tomomi; Shimazawa, Rumiko; Nagasawa, Kazuo; Hashimoto, Yuichi  
CS Institute of Molecular & Cellular Biosciences, The University of Tokyo,  
Bunkyo-ku, Tokyo, 113-0032, Japan

SO Bioorganic & Medicinal Chemistry Letters (2002), 12(7), 1043-1046  
CODEN: BMCLE8; ISSN: 0960-894X

PB Elsevier Science Ltd.

DT Journal

LA English

AB Thalidomide showed cyclooxygenase (COX)-1/2 inhibitory activity with a potency comparable to that of aspirin. Structural development studies of thalidomide resulted in potent COX-1/2 inhibitors, and COX-1-selective and COX-2-selective inhibitors.

IT 212394-02-0 212394-04-2 212394-08-6

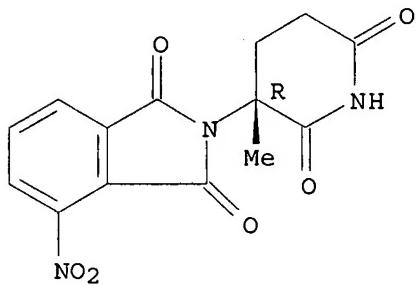
212394-10-0

RL: PAC (Pharmacological activity); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(thalidomide and analogs as cyclooxygenase inhibitors)

RN 212394-02-0 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-[(3R)-3-methyl-2,6-dioxo-3-piperidinyl]-4-nitro- (9CI) (CA INDEX NAME)

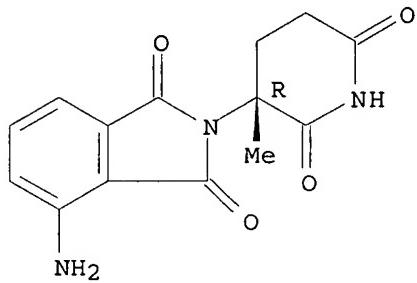
Absolute stereochemistry. Rotation (-).



RN 212394-04-2 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4-amino-2-[(3R)-3-methyl-2,6-dioxo-3-piperidinyl]- (9CI) (CA INDEX NAME)

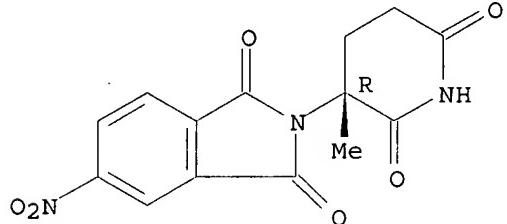
Absolute stereochemistry. Rotation (-).



RN 212394-08-6 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-[(3R)-3-methyl-2,6-dioxo-3-piperidinyl]-5-nitro- (9CI) (CA INDEX NAME)

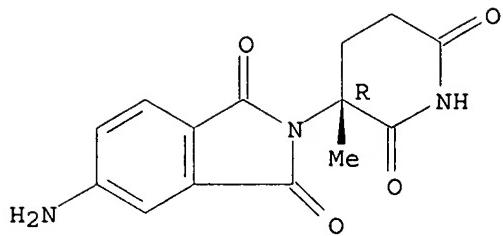
Absolute stereochemistry. Rotation (-).



RN 212394-10-0 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 5-amino-2-[(3R)-3-methyl-2,6-dioxo-3-piperidinyl]- (9CI) (CA INDEX NAME)

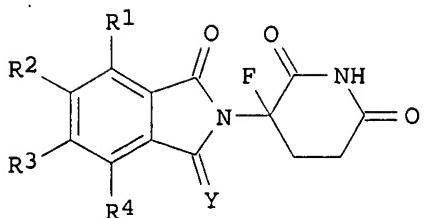
Absolute stereochemistry. Rotation (-).



RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2002 ACS  
 AN 1999:603139 CAPLUS  
 DN 131:214197  
 TI Preparation of 2-(2,6-dioxo-3-fluoropiperidin-3-yl)isoindolines for reducing inflammatory cytokine levels.  
 IN Muller, George W.; Stirling, David I.; Chen, Roger Shen-chu; Man, Hon-wah  
 PA Celgene Corp., USA  
 SO U.S., 12 pp., Cont. -in-part of U. S. 5,874,448.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5955476	A	19990921	US 1998-42274	19980313
	US 5874448	A	19990223	US 1997-976140	19971118
	CA 2317834	AA	19990916	CA 1998-2317834	19981117
	WO 9946258	A1	19990916	WO 1998-US24453	19981117
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9914138	A1	19990927	AU 1999-14138	19981117
	AU 752958	B2	20021003		
	EP 1062214	A1	20001227	EP 1998-958016	19981117
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002506068	T2	20020226	JP 2000-535637	19981117
	BR 9815613	A	20020528	BR 1998-15613	19981117
	NO 2000002529	A	20000630	NO 2000-2529	20000516
	FI 2000001192	A	20000714	FI 2000-1192	20000518
PRAI	US 1997-976140	A2	19971118		
	US 1998-42274	A	19980313		
	WO 1998-US24453	W	19981117		
OS	MARPAT	131:214197			
GI					



I

AB Title compds. (I; Y = O, H2; R1-R4 = H, halo, alkyl, alkoxy, amino), were prep'd. for redn. of tumor necrosis factor and interleukin levels (no data). Thus, a soln. of 1,3-dioxo-2-(1-tert-butoxycarbonyl-2,6-dioxopiperidin-3-yl)isoindoline (prepn. given) in THF at -40.degree. was treated with Li[N(SiMe<sub>3</sub>)<sub>2</sub>] soln. and then with N-fluorobenzenesulfonimide followed by stirring overnight to give 10% 1,3-dioxo-2-(1-tert-butoxycarbonyl-2,6-dioxo-3-fluoropiperidin-3-yl)isoindoline. The latter was stirred with HCl in dioxane for 3 days to give 77% 1,3-dioxo-2-(2,6-dioxo-3-fluoropiperidin-3-yl)isoindoline. Drug formulations contg. the latter are given.

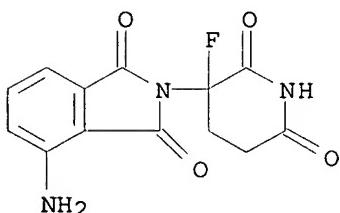
IT 220460-56-0 220460-57-1

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(prepn. of 2-(2,6-dioxo-3-fluoropiperidin-3-yl)isoindolines for reducing inflammatory cytokine levels)

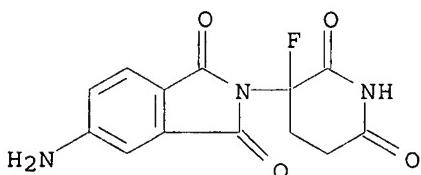
RN 220460-56-0 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4-amino-2-(3-fluoro-2,6-dioxo-3-piperidinyl)-(9CI) (CA INDEX NAME)



RN 220460-57-1 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 5-amino-2-(3-fluoro-2,6-dioxo-3-piperidinyl)-(9CI) (CA INDEX NAME)



RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2002 ACS

AN 1999:595162 CAPLUS

DN 131:228653

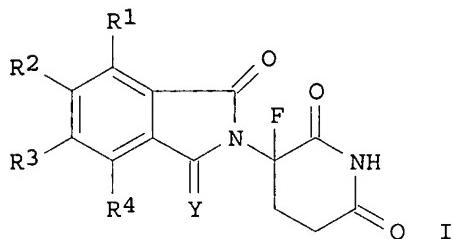
TI Preparation of 2-(2,6-dioxo-3-fluoropiperidin-3-yl)isoindolines and their use to reduce tumor necrosis factor .alpha. levels

IN Muller, George W.; Stirling, David I.; Chen, Roger Shen-chu; Man, Hon-wah  
 PA Celgene Corporation, USA  
 SO PCT Int. Appl., 32 pp.  
 CODEN: PIXXD2

DT Patent  
 LA English

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9946258	A1	19990916	WO 1998-US24453	19981117
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 5955476	A	19990921	US 1998-42274	19980313
	CA 2317834	AA	19990916	CA 1998-2317834	19981117
	AU 9914138	A1	19990927	AU 1999-14138	19981117
	AU 752958	B2	20021003		
	EP 1062214	A1	20001227	EP 1998-958016	19981117
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002506068	T2	20020226	JP 2000-535637	19981117
	BR 9815613	A	20020528	BR 1998-15613	19981117
	NO 2000002529	A	20000630	NO 2000-2529	20000516
	FI 2000001192	A	20000714	FI 2000-1192	20000518
PRAI	US 1998-42274	A	19980313		
	US 1997-976140	A2	19971118		
	WO 1998-US24453	W	19981117		
OS	MARPAT 131:228653				
GI					

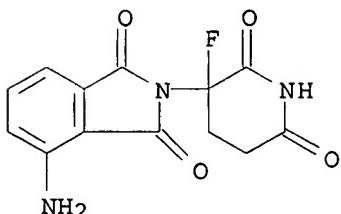


AB 1-Oxo- and 1,3-dioxo-2-(2,6-dioxo-3-fluoropiperidin-3-yl)isoindolines (I;  
 R1-R4 = H, halo, C1-4 alkyl, C1-4 alkoxy, amino; Y = O, H2) and their acid  
 addn. salts reduce the levels of inflammatory cytokines, e.g., TNF-.alpha.  
 in mammals (no data). A typical embodiment is 1,3-dioxo-2-(2,6-dioxo-3-  
 fluoropiperidin-3-yl)isoindoline which was prep'd. by N-protection of  
 1,3-dioxo-2-(2,6-dioxopiperidin-3-yl)isoindoline with (Me3CO2C)2O (90%),  
 fluorination of N-BOC-protected intermediate with (PhSO2)2NF in presence  
 of BuLi or (Me3Si)2NLi (10%), and deprotection with HCl (dioxane soln.)  
 (77% yield). Tablets, capsules and injection or infusion solns. contg. I  
 are formulated.

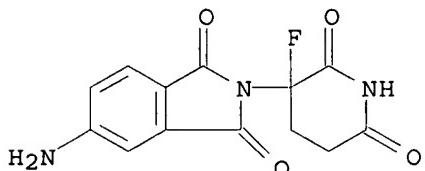
IT 220460-56-0P 220460-57-1P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
 study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use);

BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (prep. of 2-(2,6-dioxo-3-fluoropiperidin-3-yl)isoindolines and their  
 use to reduce tumor necrosis factor .alpha. levels)  
 RN 220460-56-0 CAPLUS  
 CN 1H-Isoindole-1,3(2H)-dione, 4-amino-2-(3-fluoro-2,6-dioxo-3-piperidinyl)-  
 (9CI) (CA INDEX NAME)

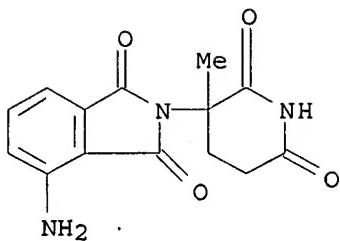


RN 220460-57-1 CAPLUS  
 CN 1H-Isoindole-1,3(2H)-dione, 5-amino-2-(3-fluoro-2,6-dioxo-3-piperidinyl)-  
 (9CI) (CA INDEX NAME)



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

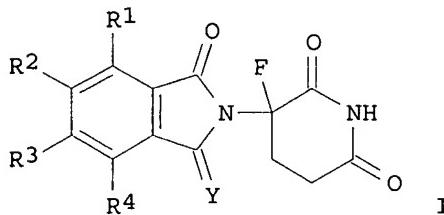
L4 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2002 ACS  
 AN 1999:386135 CAPLUS  
 DN 131:129881  
 TI Amino-substituted thalidomide analogs: potent inhibitors of TNF-.alpha.  
 production  
 AU Muller, George W.; Chen, Roger; Huang, Shaei-Yun; Corral, Laura G.; Wong,  
 Lu Min; Patterson, Rebecca T.; Chen, Yuxi; Kaplan, Gillia; Stirling, David  
 I.  
 CS Celgene Corporation, Warren, NJ, 07059, USA  
 SO Bioorganic & Medicinal Chemistry Letters (1999), 9(11), 1625-1630  
 CODEN: BMCLE8; ISSN: 0960-894X  
 PB Elsevier Science Ltd.  
 DT Journal  
 LA English  
 AB Thalidomide is a known inhibitor of TNF-.alpha. release in LPS stimulated  
 human PBMC. Herein we describe the TNF-.alpha. inhibitory activity of  
 amino substituted analogs of thalidomide and its isoindolin-1-one analog,  
 EM-12. The 4-amino substituted analogs were found to be potent inhibitors  
 of TNF-.alpha. release in LPS stimulated human PBMC.  
 IT 202271-87-2P  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
 study, unclassified); SPN (Synthetic preparation); BIOL (Biological  
 study); PREP (Preparation)  
 (amino derivs. of thalidomide and EM-12 as inhibitors of TNF-.alpha.  
 prodn.)  
 RN 202271-87-2 CAPLUS  
 CN 1H-Isoindole-1,3(2H)-dione, 4-amino-2-(3-methyl-2,6-dioxo-3-piperidinyl)-  
 (9CI) (CA INDEX NAME)



RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2002 ACS  
 AN 1999:136769 CAPLUS  
 DN 130:168244  
 TI Substituted 2-(2,6-dioxo-3-fluoropiperidin-3-yl)isoindolines and method of reducing TNF. $\alpha$ . levels  
 IN Muller, George W.; Stirling, David I.; Chen, Roger Shen-Chu; Man, Hon-Wah  
 PA Celgene Corporation, USA  
 SO U.S., 10 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5874448	A	19990223	US 1997-976140	19971118
	US 5955476	A	19990921	US 1998-42274	19980313
	NO 2000002529	A	20000630	NO 2000-2529	20000516
	FI 2000001192	A	20000714	FI 2000-1192	20000518
PRAI	US 1997-976140	A2	19971118		
	US 1998-42274	A	19980313		
	WO 1998-US24453	W	19981117		
OS	MARPAT	130:168244			
GI					

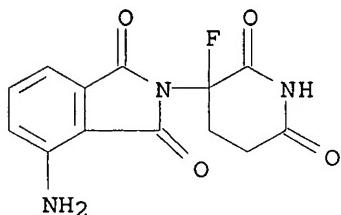


AB 1-Oxo-2-(2,6-dioxo-3-fluoropiperidin-3-yl)isoindolines and 1,3-dioxo-2-(2,6-dioxo-3-fluoropiperidin-3-yl)isoindolines reduce the levels of TNF. $\alpha$ . in mammals (no data), and may be useful in the treatment of viral infections. The compds. I [Y = O or H<sub>2</sub>; R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub> = H, halo, C<sub>1</sub>-4 alkyl or alkoxy, or amino], and their acid addn. salts when a protonatable N atom is present, are claimed. A typical embodiment is 1,3-dioxo-2-(2,6-dioxo-3-fluoropiperidin-3-yl)isoindoline (II), i.e. I [Y = O, R<sub>1</sub>-R<sub>4</sub> = H]. This compd. was prep'd. in a variety of ways. For instance, the non-fluorinated analog of II was N-BOC-protected on its piperidine ring, lithiated with BuLi in THF, fluorinated with N-fluorobenesulfonimide, and deprotected with HCl, to give II.  
 IT 220460-56-0P, 1,3-Dioxo-2-(2,6-dioxo-3-fluoropiperidin-3-yl)-4-

aminoisoindoline 220460-57-1P, 1,3-Dioxo-2-(2,6-dioxo-3-fluoropiperidin-3-yl)-5-aminoisoindoline 220460-76-4P,  
1,3-Dioxo-2-(2,6-dioxo-3-fluoropiperidin-3-yl)-5-aminoisoindoline hydrochloride  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(target compd.; prepn. of substituted (dioxofluoropiperidinyl)isoindolines and method of reducing TNF. $\alpha$ . levels)

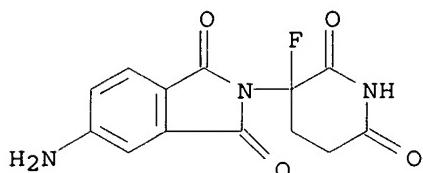
RN 220460-56-0 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4-amino-2-(3-fluoro-2,6-dioxo-3-piperidinyl)-(9CI) (CA INDEX NAME)



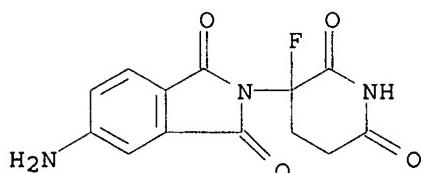
RN 220460-57-1 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 5-amino-2-(3-fluoro-2,6-dioxo-3-piperidinyl)-(9CI) (CA INDEX NAME)



RN 220460-76-4 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 5-amino-2-(3-fluoro-2,6-dioxo-3-piperidinyl)-, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2002 ACS

AN 1998:795004 CAPLUS

DN 130:38290

TI Substituted 2-(2,6-dioxopiperidin-3-yl)phthalimides and 1-oxoisooindolines and method of reducing tnf. $\alpha$ . levels

IN Muller, George W.; Stirling, David I.; Chen, Roger Shen-chu

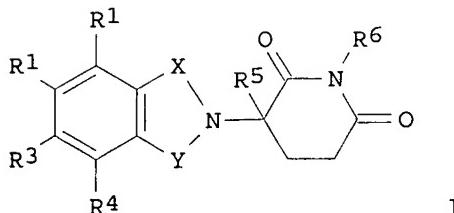
PA Celgene Corporation, USA  
SO PCT Int. Appl., 31 pp.

CODEN: PIXXD2

DT Patent  
LA English

FAN.CNT 7

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9854170	A1	19981203	WO 1998-US10886	19980528
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9877012	A1	19981230	AU 1998-77012	19980528
	AU 741982	B2	20011213		
	EP 984955	A1	20000315	EP 1998-924959	19980528
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002501536	T2	20020115	JP 1999-500909	19980528
	FI 9902490	A	20000127	FI 1999-2490	19991123
	NO 9905751	A	20000128	NO 1999-5751	19991123
	US 6395754	B1	20020528	US 2000-445002	20000222
	US 2002173658	A1	20021121	US 2002-143416	20020510
PRAI	US 1997-48278P	P	19970530		
	WO 1998-US10886	W	19980528		
	US 2000-445002	A1	20000222		
OS	MARPAT 130:38290				
GI					

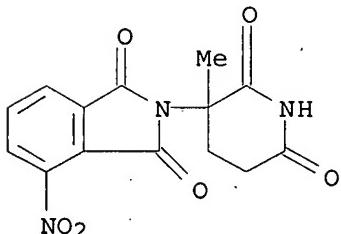


I

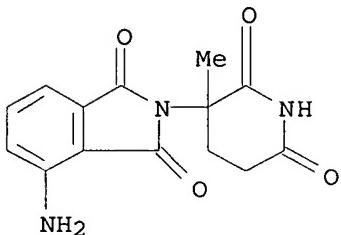
AB Substituted 2-(2,6-dioxopiperidin-3-yl)phthalimides and 1-oxo-2-(2,6-dioxopiperidin-3-yl)isoindolines (I) (one of X and Y = CO and the other is CH<sub>2</sub> or CO; R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> independently is halo, C<sub>1</sub>-4-alkyl or -alkoxy or one of R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> is (un)substituted NH<sub>2</sub> and the others are H; R<sub>5</sub> = H or C<sub>1</sub>-8-alkyl, benzo, Cl, F; R<sub>6</sub> = substituted CH<sub>2</sub>O(CO)R<sub>8</sub>CH<sub>2</sub>NH<sub>2</sub> (R<sub>8</sub> = m- or p-phenylene of (CH<sub>2</sub>)<sub>n</sub> (n = 1-4))) were claimed to reduce the levels of TNF. $\alpha$ . in a mammal. I (R<sub>6</sub> = H) were prep'd. and used in pharmaceutical compns. Thus 1-oxo-2-(2,6-dioxo-3-methylpiperidin-3-yl)-4,5,6,7-tetrafluoroisoindoline was prep'd. in a multistep reaction initially from methylglutamic acid which was converted via many steps to . $\alpha$ -amino-. $\alpha$ -methylglutarimide which was converted via many steps to the final product.

IT 202271-74-7P 202271-87-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(for prepn. of dioxopiperidinylphthalimides and oxoisoindolines for

redn. of TNF. $\alpha$ . levels)  
RN 202271-74-7 CAPLUS  
CN 1H-Isoindole-1,3(2H)-dione, 2-(3-methyl-2,6-dioxo-3-piperidinyl)-4-nitro-(9CI) (CA INDEX NAME)



RN 202271-87-2 CAPLUS  
CN 1H-Isoindole-1,3(2H)-dione, 4-amino-2-(3-methyl-2,6-dioxo-3-piperidinyl)-(9CI) (CA INDEX NAME)



RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2002 ACS  
AN 1998:486299 CAPLUS  
DN 129:216494  
TI Tumor necrosis factor-alpha production enhancing activity of substituted 3'-methylthalidomide: influence of substituents at the phthaloyl moiety on the activity and stereoselectivity  
AU Miyachi, Hiroyuki; Kolso, Yukiko; Shirai, Ryuichi; Niwayama, Satomi; Liu, Jun O.; Hashimoto, Yuichi  
CS Institute of Molecular and Cellular Biosciences, The University of Tokyo, Tokyo, 113-0032, Japan  
SO Chemical & Pharmaceutical Bulletin (1998), 46(7), 1165-1168  
CODEN: CPBTAL; ISSN: 0009-2363  
PB Pharmaceutical Society of Japan  
DT Journal  
LA English  
OS CASREACT 129:216494  
AB The synthesis and tumor necrosis factor (TNF)- $\alpha$ . prodn. enhancing activity of substituted 3'-methyl-thalidomides on human leukemia cell line HL-60 stimulated with 12-O-tetradecanoyl-phorbol 13-acetate (TPA) was described. Though the introduction of an electron-donating amino group at the phthaloyl moiety of  $\alpha$ -methylthalidomides enhanced the activity, substituted  $\alpha$ -methylthalidomides showed decreased stereoselectivity as compared to that of non-substituted  $\alpha$ -methylthalidomide. The data indicates that the TNF- $\alpha$ . prodn. enhancing activity of thalidomide derivs. depends on both the electronic-state of substituents at the fused benzene ring and the stereochem. of the glutarimide moiety. (S)-4-amino-3'-methylthalidomide induced a 695% increase in the amt. of

tumor necrosis factor-alpha prodn. at 0.3. $\mu$ m by the human leukemia cell line HL-60 stimulated with 12-O-tetradecanoyl-phorbol 13-acetate.

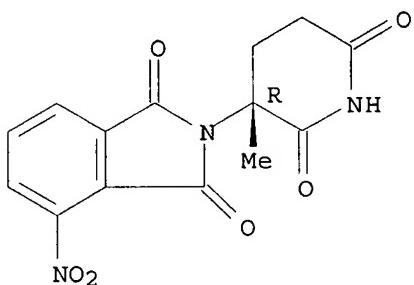
IT 212394-02-0P 212394-03-1P 212394-04-2P  
212394-05-3P 212394-08-6P 212394-09-7P  
212394-10-0P 212394-11-1P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(tumor necrosis factor-alpha prodn. enhancing activity of substituted 3'-methylthalidomides)

RN 212394-02-0 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-[(3R)-3-methyl-2,6-dioxo-3-piperidinyl]-4-nitro- (9CI) (CA INDEX NAME)

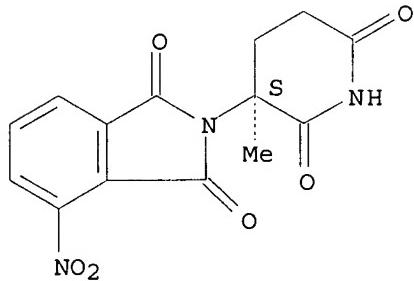
Absolute stereochemistry. Rotation (-).



RN 212394-03-1 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-[(3S)-3-methyl-2,6-dioxo-3-piperidinyl]-4-nitro- (9CI) (CA INDEX NAME)

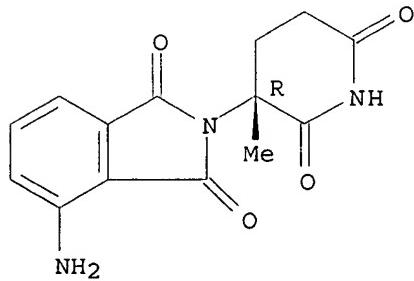
Absolute stereochemistry. Rotation (+).



RN 212394-04-2 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4-amino-2-[(3R)-3-methyl-2,6-dioxo-3-piperidinyl]- (9CI) (CA INDEX NAME)

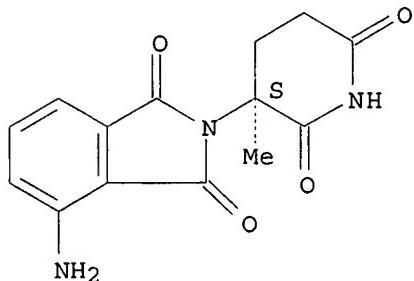
Absolute stereochemistry. Rotation (-).



RN 212394-05-3 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4-amino-2-[(3S)-3-methyl-2,6-dioxo-3-piperidinyl]- (9CI) (CA INDEX NAME)

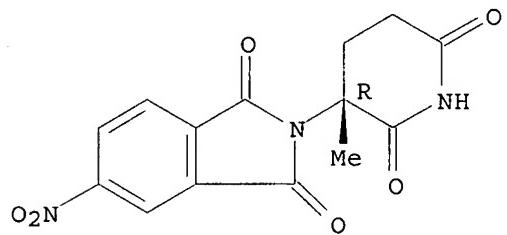
Absolute stereochemistry. Rotation (+).



RN 212394-08-6 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-[(3R)-3-methyl-2,6-dioxo-3-piperidinyl]-5-nitro- (9CI) (CA INDEX NAME)

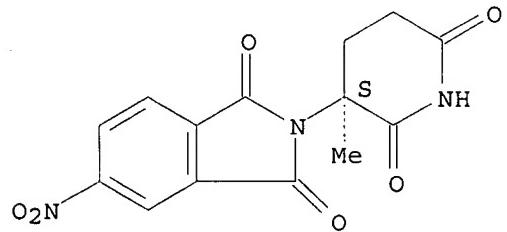
Absolute stereochemistry. Rotation (-).



RN 212394-09-7 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-[(3S)-3-methyl-2,6-dioxo-3-piperidinyl]-5-nitro- (9CI) (CA INDEX NAME)

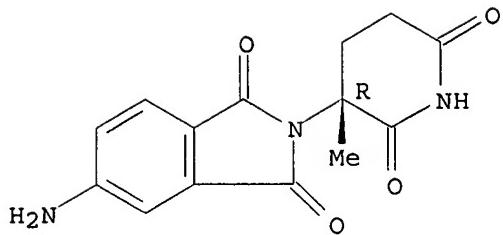
Absolute stereochemistry. Rotation (+).



RN 212394-10-0 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 5-amino-2-[(3R)-3-methyl-2,6-dioxo-3-piperidinyl]- (9CI) (CA INDEX NAME)

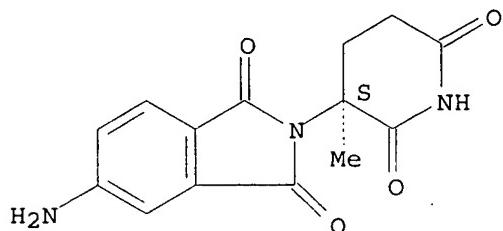
Absolute stereochemistry. Rotation (-).



RN 212394-11-1 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 5-amino-2-[(3S)-3-methyl-2,6-dioxo-3-piperidinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2002 ACS

AN 1998:87727 CAPLUS

DN 128:140615

TI Substituted 2-(2,6-dioxo-3-piperidinyl)phthalimides and -1-oxoisooindolines and method of reducing TNF-.alpha. levels

IN Muller, George W.; Stirling, David I.; Chen, Roger Shen-chu

PA Celgene Corp., USA; Muller, George W.; Stirling, David I.; Chen, Roger Shen-Chu

SO PCT Int. Appl., 48 pp.  
CODEN: PIXXD2

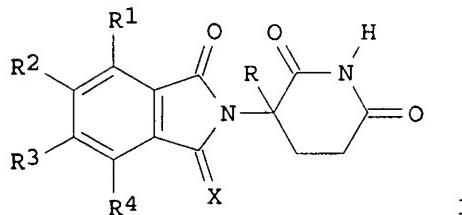
DT Patent

LA English

FAN.CNT 7

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9803502	A1	19980129	WO 1997-US13375	19970724
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	US 5635517	A	19970603	US 1996-690258	19960724
	US 5635517	B1	19990629		
	US 5798368	A	19980825	US 1996-701494	19960822
	AU 9738998	A1	19980210	AU 1997-38998	19970724
	AU 715779	B2	20000210		
	EP 925294	A1	19990630	EP 1997-936295	19970724
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001503384	T2	20010313	JP 1998-507259	19970724
	RU 2177944	C2	20020110	RU 1999-103124	19970724

FI	9900101	A	19990319	FI	1999-101	19990119
US	6281230	B1	20010828	US	2000-543809	20000406
US	6476052	B1	20021105	US	2000-633908	20000807
US	6316471	B1	20011113	US	2000-634061	20001017
US	6335349	B1	20020101	US	2000-716528	20001120
US	2002045643	A1	20020418	US	2001-781179	20010212
US	2002183360	A1	20021205	US	2002-119486	20020410
PRAI	US 1996-690258	A	19960724			
	US 1996-701494	A	19960822			
	WO 1994-US7411	A	19940701			
	US 1996-701499	A1	19960724			
	US 1997-48278P	P	19970530			
	WO 1997-US13375	W	19970724			
	US 1999-230389	B3	19990507			
	US 2000-543804	A3	20000406			
	US 2000-543809	A1	20000406			
	US 2000-633908	A1	20000807			
OS	MARPAT 128:140615					
GI						



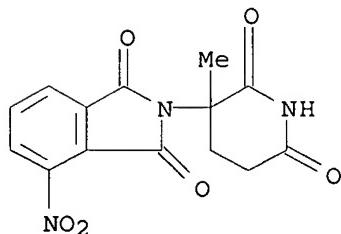
AB Title compds. I (X = O, H2; R = H, alkyl, benzyl, halo; R1, R2, R3, R4 = H, alkyl, alkoxy, halo, amino) were prep'd. for TNF-.alpha. redn. in mammals. Thus, I (X = O, R = R1 = R3 = R4 = H, R2 = NO2), prep'd. from 4-nitrophthalic anhydride and .alpha.-aminoglutarimide hydrochloride, was hydrogenated over 10% Pd/C in 1,4-dioxane at 50 psi for 6.5 h to give 69% I (X = O, R = R1 = R3 = R4 = H, R2 = NH2). Several examples of formulations were given.

IT 202271-74-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(2-(2,6-dioxo-3-piperidinyl)phthalimides and -1-oxoisooindolines for reducing TNF-.alpha. levels)

RN 202271-74-7 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 2-(3-methyl-2,6-dioxo-3-piperidinyl)-4-nitro-(9CI) (CA INDEX NAME)



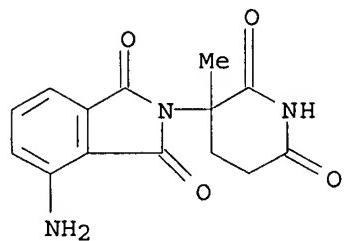
IT 202271-87-2P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

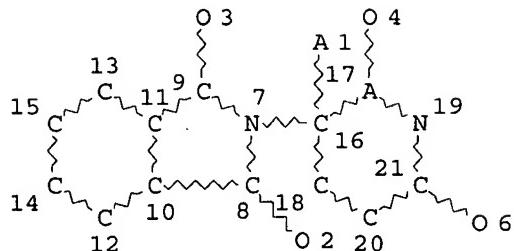
(2- (2,6-dioxo-3-piperidinyl)phthalimides and -1-oxoisooindolines for  
reducing TNF-.alpha. levels)

RN 202271-87-2 CAPLUS

CN 1H-Isoindole-1,3(2H)-dione, 4-amino-2-(3-methyl-2,6-dioxo-3-piperidinyl)-  
(9CI) (CA INDEX NAME)



=> d 11  
L1 HAS NO ANSWERS  
L1 STR



N 5

NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 21

STEREO ATTRIBUTES: NONE

=> s 11 ful  
FULL SEARCH INITIATED 15:49:48 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 1053 TO ITERATE

100.0% PROCESSED 1053 ITERATIONS 22 ANSWERS  
SEARCH TIME: 00.00.01

L3 22 SEA SSS FUL L1

=> d scan

L3 22 ANSWERS REGISTRY COPYRIGHT 2002 ACS  
IN Cyclopropanecarboxamide, N-[2,3-dihydro-2-(3-methyl-2,6-dioxo-3-piperidinyl)-1,3-dioxo-1H-isoindol-4-yl]methyl] - (9CI)  
MF C19 H19 N3 O5

